Business Intelligence

Business Intelligence, or BI, is a term that covers a set of practices and technologies for presenting and analyzing business data. Even though virtually all businesses these days use some form of reporting technology, if only from canned reports provided by software used in the business, many can benefit from adopting a complete BI strategy designed to extract, normalize and clean business data from different data sources.

Reports, charts and dashboards are the visible part of a BI solution that users interact with. Accurate, actionable reporting rests on a solid foundation of reliable data. Most businesses have multiple, incompatible sources of data like line-of-business systems, Enterprise Resource Planning (ERP) systems and documents.

These data sources often contain inconsistent or missing data. Poor quality source data can lead to inaccurate reporting. It's best when data quality can be improved at its source, so a complete BI engagement often begins with a look at source data quality improvement. For example, validating postal codes in source data systems ensures that every address can be located on a map in the BI dashboard.

A complete business intelligence system cleans and consolidates data from these sources through a process called Extract, Transform and Load (ETL) and loads a data warehouse. ETL can be performed with standardized tools, custom scripting or, most often, a combination of both.

Sometimes a formal data warehouse is impractical or restrictive. In these cases, a more informal "data lake" of partially-cleansed data is often the most practical solution. Data from the data lake can then be passed through additional processing steps for specific business purposes.

The main benefit of clean, standardized data is how easy it becomes to aggregate it, roll it up, and compare it to external data sources. Reports and dashboards are a breeze to create and use with confidence when your underlying data is reliable.

Sometimes, a successful BI project only touches a subset of business data for a specific purpose. These are the types of engagement that I see in the Windsor/Essex market the most often, if only because of the time and expense sometimes involved in a complete BI solution.

For example, I once helped a client reconcile sales transaction records with their inventory management system to produce reports that identified the re-order quantities needed to maintain stock levels. The sales records were on individual spreadsheets in multiple different formats and delivered via email. The ETL solution pulled spreadsheets from email attachments, extracted data from them and consolidated into a new database.

This solution was far from a complete data warehouse solution, but it solved a specific business problem and it was delivered at comparatively low cost. Over time, well-executed smaller projects can build up a valuable repository of reliable business data. It's often better for small to medium businesses to tackle data challenges one by one. This makes even more sense if the goal of the business is to build up an internal BI team. New recruits can learn the business processes and BI techniques over time, as they need them for specific projects. I've found this to be a successful way to build up strong teams while executing successful projects along the way.

Good decisions require good data. If you're relying on canned reports or pulling data together manually from spreadsheets, you should consider investing in Business Intelligence. The resources to make this investment with confidence are increasingly found in the region. Besides consultancies like Parallel 42 Systems who can develop or guide a BI solution, our post-secondary institutions produce an annual crop of talented graduates with skills in BI and analytics.

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